Access DB# 146161

# SEARCH REQUEST FORM

**Scientific and Technical Information Center**

Requester's Full Name: JANIS DOTE Examiner #: 68274 Date: 2/25/05
Art Unit: 1756 Phone Number 30 571-272-1382 Serial Number: 10/760,039
Mail Box and Bldg/Room Location: REM 9C75 Results Format Preferred (circle) PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Azine-based dennic charge transport materials.

Inventors (please provide full names): Zbigniew Tokarski; Nusrallah Jubran; Vytautas Getautis; Valentas Gaidelis; Maryte Daskeviciene; Edmundas Nantrimas; Ingrida Paulauskaite; Jonas Sidaravicius

Earliest Priority Filing Date: 6/30/03

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search compound in attached claims 22-25.
Examples of compounds from specification are also attached.

SCIENTIFIC REFERENCE BR
Sci & Tech Inf · Ctr
FEB 25 RECD
Pat. & T.M. Office

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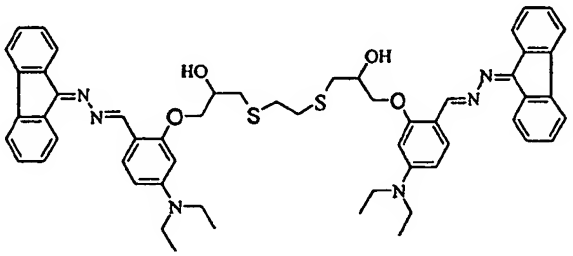
| STAFF USE ONLY | Type of Search | Vendors and cost where applicable |
|---|---|---|
| Searcher: EL | NA Sequence (#) | STN |
| Searcher Phone #: | AA Sequence (#) | Dialog |
| Searcher Location: | Structure (#) | Questel/Orbit |
| Date Searcher Picked Up: | Bibliographic | Dr.Link |
| Date Completed: 3-4-05 | Litigation | Lexis/Nexis |
| Searcher Prep & Review Time: | Fulltext | Sequence Systems |
| Clerical Prep Time: | Patent Family | WWW/Internet |
| Online Time: | Other | Other (specify) |

Y and Y' comprise, each independently, a (disubstituted)methylene group, such as a (di-aromatic)methylene group, for example, 10H-anthracen-9-ylidene group, 9-fluorenylidenyl group, and diarylmethylene group (e.g. diphenylmethylene group); and

Z is a linking group, such as $-(CH_2)_m-$ where m is an integer between 1 and 20, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an $NR_6$ group, a $CR_7$, or a $CR_8R_9$ group where $R_6$, $R_7$, $R_8$, and $R_9$ are, independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

Non-limiting examples of such charge transport materials have the following formulas:



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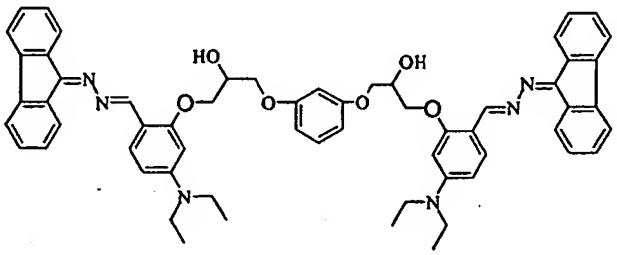

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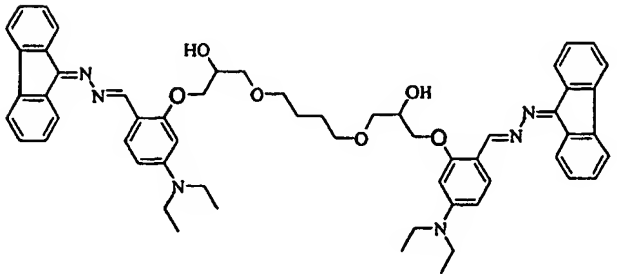

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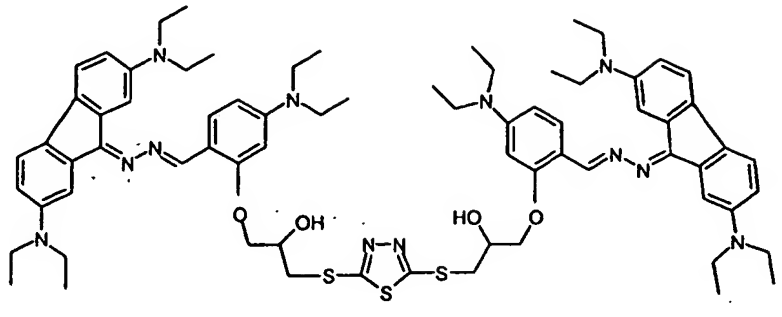

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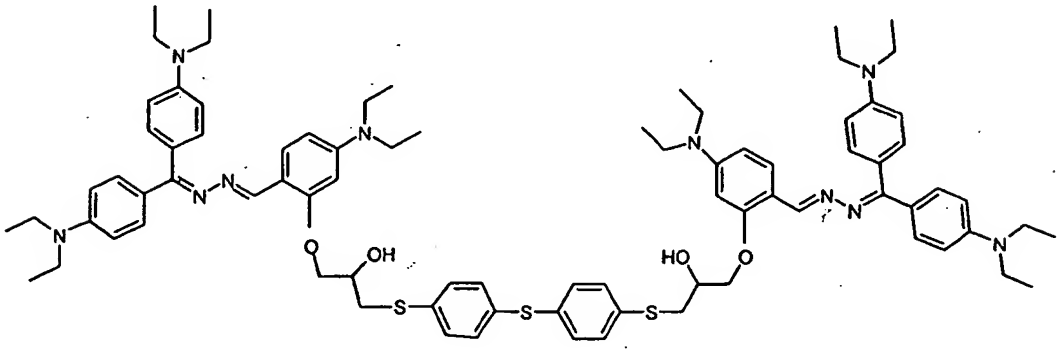


(11).

These photoreceptors may be used successfully with both dry toners and liquid toners to produce high quality images. The high quality of the images can be maintained after repeated cycling.

Synthesis Of Charge Transport Materials

The synthesis of the charge transport materials of this invention can be prepared by the following multi-step synthetic procedures, although other suitable procedures can be used by a person of ordinary skill in the art based on the disclosure herein.

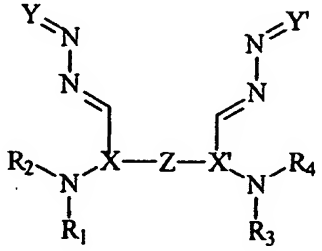
The first step is the reaction of a (disubstituted)ketone, such as diphenyl ketone, 9-fluorenone, and 10H-anthracenone, with an excess of hydrazine to form the corresponding (disubstituted)ketone hydrazone. In the second step, the (disubstituted)ketone hydrazone reacts with an aromatic aldehyde having a (disubstituted)amine group and a hydroxyl group to form the corresponding azine compound having a (disubstituted)amine group and a hydroxyl group. This step supplies the Y, X, $R_1$ and $R_2$ groups or the Y', X', $R_3$ and $R_4$ groups of formula (1).

19. The electrophotographic imaging process of claim 18 wherein said organophotoreceptor further comprises a second charge transport material.

20. The electrophotographic imaging process of claim 18 wherein Z has the formula $-(CH_2)_m-$ where m is an integer between 1 and 20, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an $NR_6$ group, a $CR_7$, or a $CR_8R_9$ group where $R_6$, $R_7$, $R_8$, and $R_9$ are, independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

21. The electrophotographic imaging process of claim 18 wherein said toner comprises colorant particles.

22. A charge transport material having the formula



where $R_1$, $R_2$, $R_3$, and $R_4$ comprise, each independently, an alkyl group, an alkenyl group, an aromatic group, a heterocyclic group, or a part of a ring group;

X and X' comprise, each independently, an aromatic group;

Y and Y' comprise, each independently, a (disubstituted)methylene group; and

Z is a linking group.

23. The charge transport material of claim 22 wherein X and X' are, each independently, a $C_6H_3$ group.

24. The charge transport material of claim 22 wherein the (disubstituted)methylene group is selected form the group consisting of a 10H-anthracen-9-ylidene group, a 9-fluorenylidene group, and a diarylmethylene group.

25. The charge transport material of claim 22 wherein Z has the formula $-(CH_2)_m-$ where m is an integer between 1 and 20, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an $NR_6$ group, a $CR_7$, or a $CR_8R_9$ group where $R_6$, $R_7$, $R_8$, and $R_9$ are, independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

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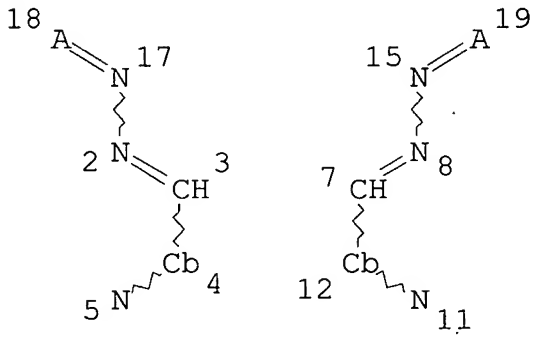

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CONNECT IS M3 RC AT 4
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DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 4
GGCAT IS UNS AT 12
DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
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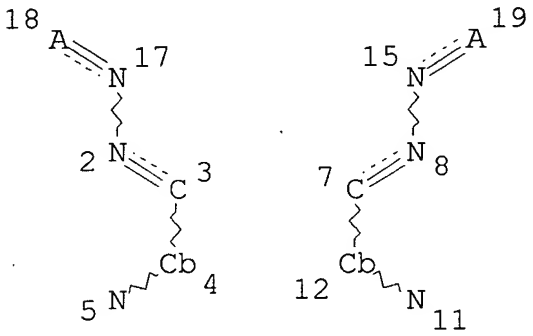


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L9 ANSWER 1 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:1965 ZCAPLUS
DN 142:103066
ED Entered STN: 31 Dec 2004
TI Azine-based dimeric charge transport materials
IN Tokarski, Zbigniew; Jubran, Nusrallah; Getautis, Vytautas; Gaidelis, Valentas; Daskeviciene, Maryte; Montrimas, Edmundas; Paulauskaite, Ingrida; Sidaravicius, Jonas applicants
PA USA
SO U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM G03G005-06
ICS C07C251-72
NCL 430058350; 430072000; 430077000; 430074000; 430058650; 564251000
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2004265717 | A1 | 20041230 | US 2004-760039 | 20040116 |
| | EP 1494080 | A1 | 20050105 | EP 2004-253868 | 20040629 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,

PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR

JP 2005025192 A2 20050127 JP 2004-194403 200406 30

PRAI US 2003-483726P P 20030630
US 2004-760039 A 20040116

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
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| US 2004265717 | ICM | G03G005-06 |
| | ICS | C07C251-72 |
| | NCL | 430058350; 430072000; 430077000; 430074000; 430058650; 564251000 |
| US 2004265717 | ECLA | C07C251/88 |
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| JP 2005025192 | FTERM | 2H068/AA20; 2H068/AA34; 2H068/AA35; 2H068/AA54; 2H068/AA55; 2H068/BA16; 2H068/BA18; 2H068/BA23; 4C036/AD08; 4C036/AD20; 4H006/AA01; 4H006/AA03; 4H006/AB76; 4H006/TA04; 4H006/TB14; 4H006/TB36; 4H006/TB76 |

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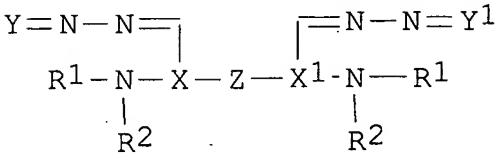


I

AB Improved organo photoreceptor comprises an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising: (a) a charge transport material having the formula I (R1-4 = alkyl group, alkenyl group, arom. group, heterocyclic group, or a part of a ring group; X and X' = arom. group; Y and Y' = (disubstituted)methylene group; and Z is a linking group); (b) a charge generating compd.; and (c) an elec. conductive substrate on which said charge transport material and said charge generating compd. are located. Corresponding electrophotog. apparatuses and imaging methods are also described.

ST azine dimeric electrophotog photoreceptor charge transport material

IT Electrophotographic photoconductors (photoreceptors)
(azine-based dimeric charge transport materials)

IT **816463-93-1P 816463-94-2P 816463-95-3P 816463-96-4P 816463-97-5P 816463-98-6P 816463-99-7P 816464-00-3P 816464-01-4P**

**816464-02-5P**
(azine-based dimeric charge transport materials for electrophotog.)

IT 2915-84-6P, 2,7-Diamino-9-fluorenone 122010-64-4P 215377-16-5P 816464-03-6P 816464-04-7P 816464-05-8P 816464-07-0P 816464-08-1P
(prepn. of azine-based dimeric charge transport materials for electrophotog.)

IT 80-05-7, reactions 90-93-7 106-89-8, Epichlorohydrin, reactions 108-46-3, 1,3-Benzenediol, reactions 486-25-9, 9-Fluorenone 540-63-6, 1,2-Ethanedithiol 626-04-0, 1,3-Benzenedithiol 1072-71-5, 1,3,4-Thiadiazolidine-2,5-dithione 2425-79-8, 1,4-Butanediol diglycidyl ether 17754-90-4, 4-Diethylaminosalicylaldehyde 19362-77-7, 4,4'-Thiobisbenzenethiol 31551-45-8, 2,7-Dinitro-9-fluorenone
(prepn. of azine-based dimeric charge transport materials for electrophotog.)

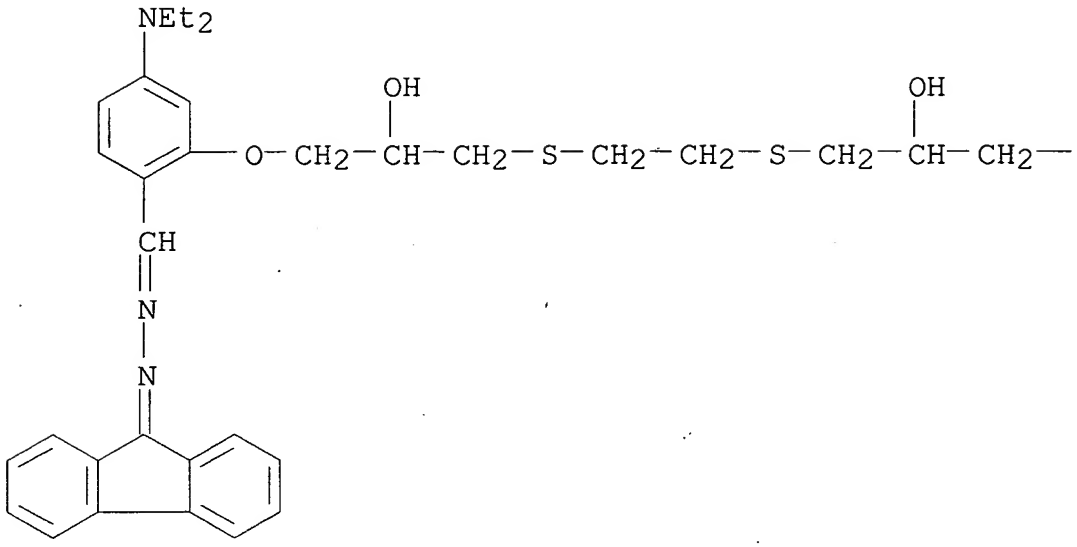
IT 13629-22-6P 816464-06-9P
(prepn. of azine-based dimeric charge transport materials for electrophotog.)

IT **816463-93-1P 816463-94-2P 816463-95-3P 816463-96-4P 816463-97-5P 816463-98-6P 816463-99-7P 816464-00-3P 816464-01-4P 816464-02-5P**
(azine-based dimeric charge transport materials for electrophotog.)

RN 816463-93-1 ZCAPLUS

CN Benzaldehyde, 2,2'-[1,2-ethanediylbis[thio(2-hydroxy-3,1-propanediyl)oxy]]bis[4-(diethylamino)-, bis(9H-fluoren-9-ylidenehydrazone) (9CI) (CA INDEX NAME)

PAGE 1-A



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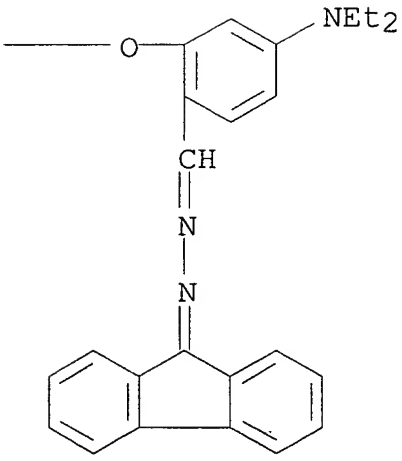

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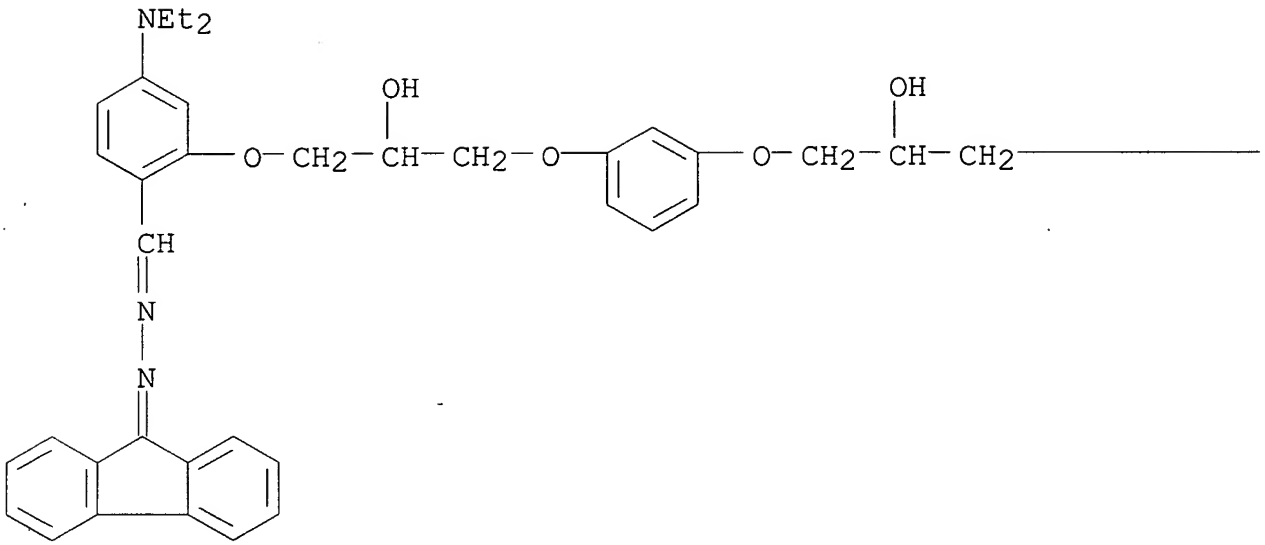

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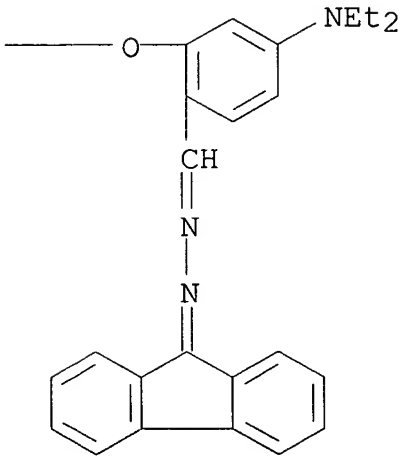

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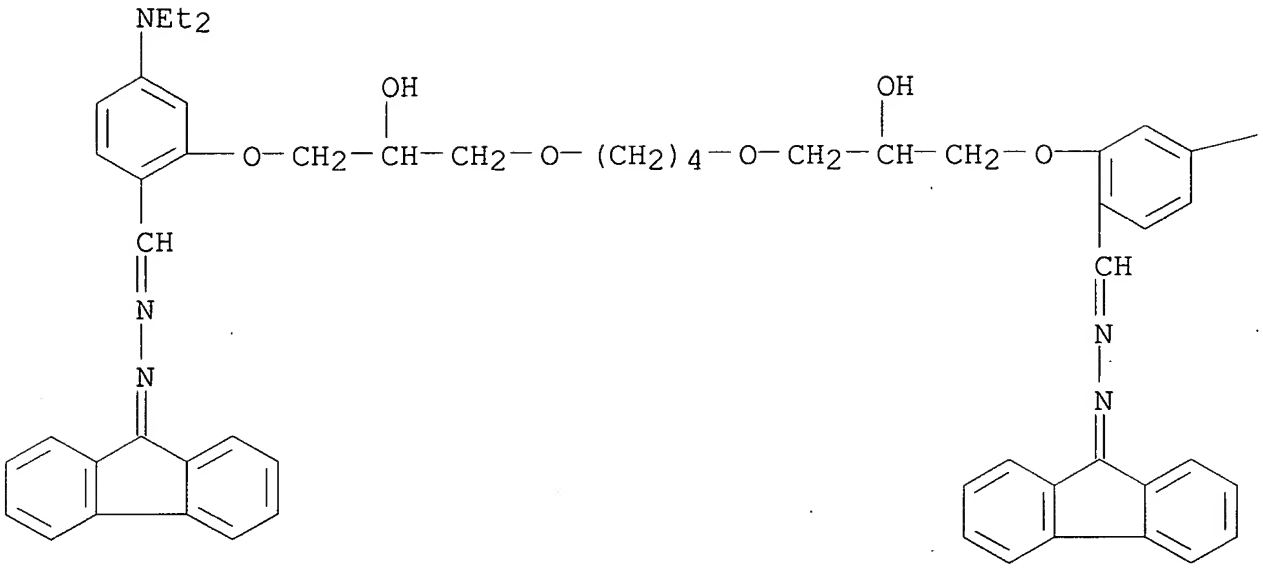

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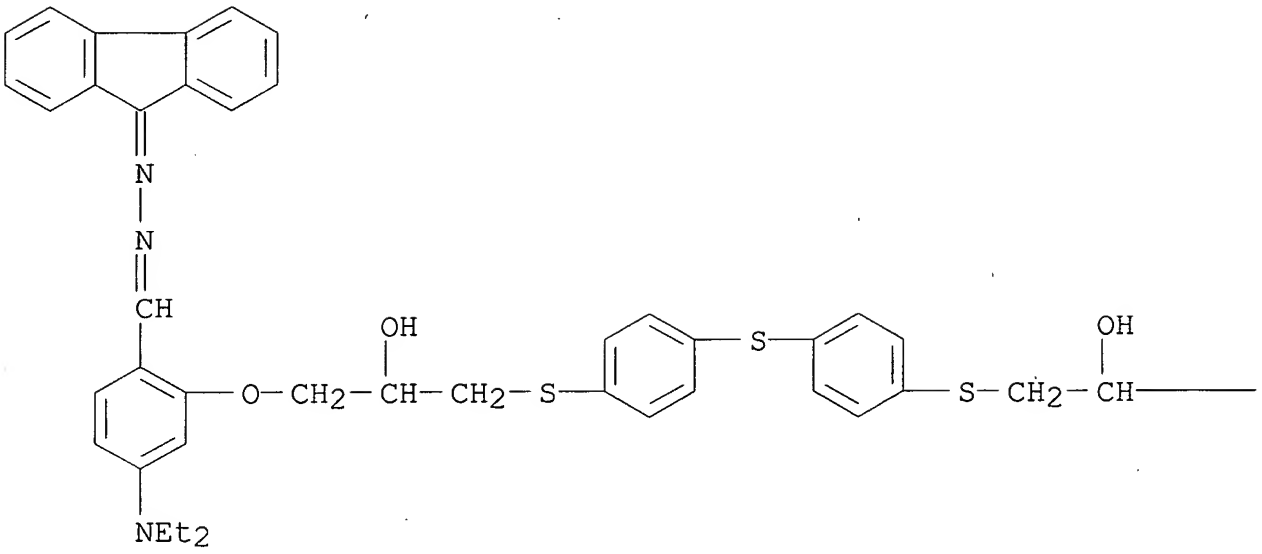

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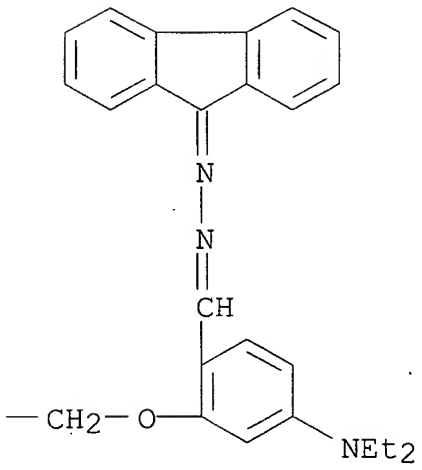

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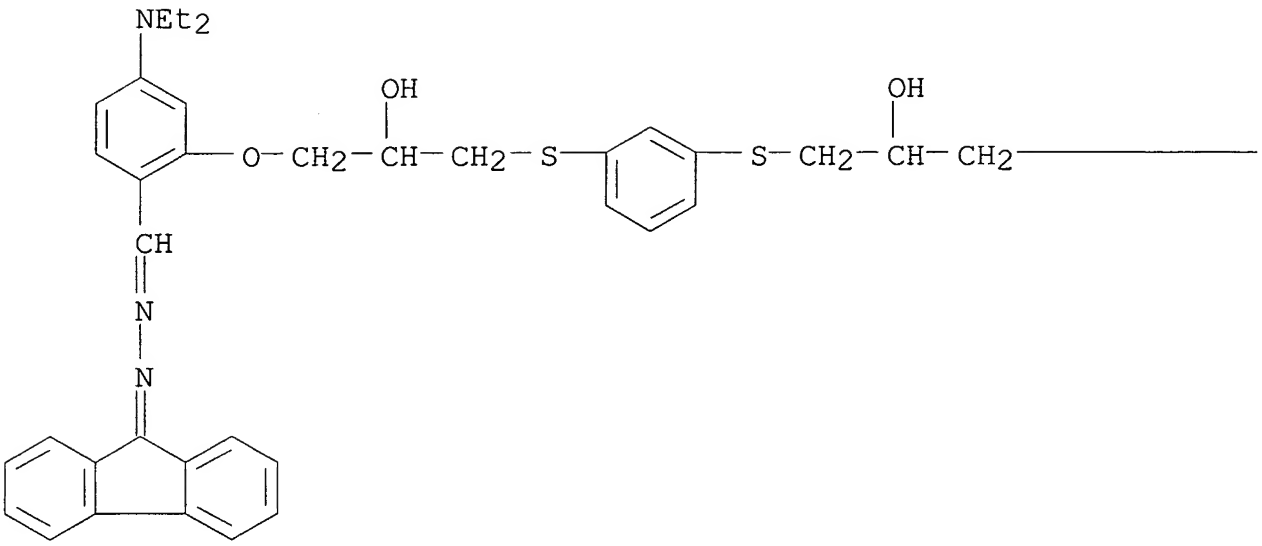

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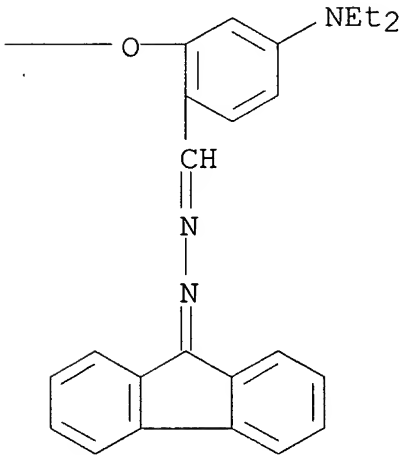

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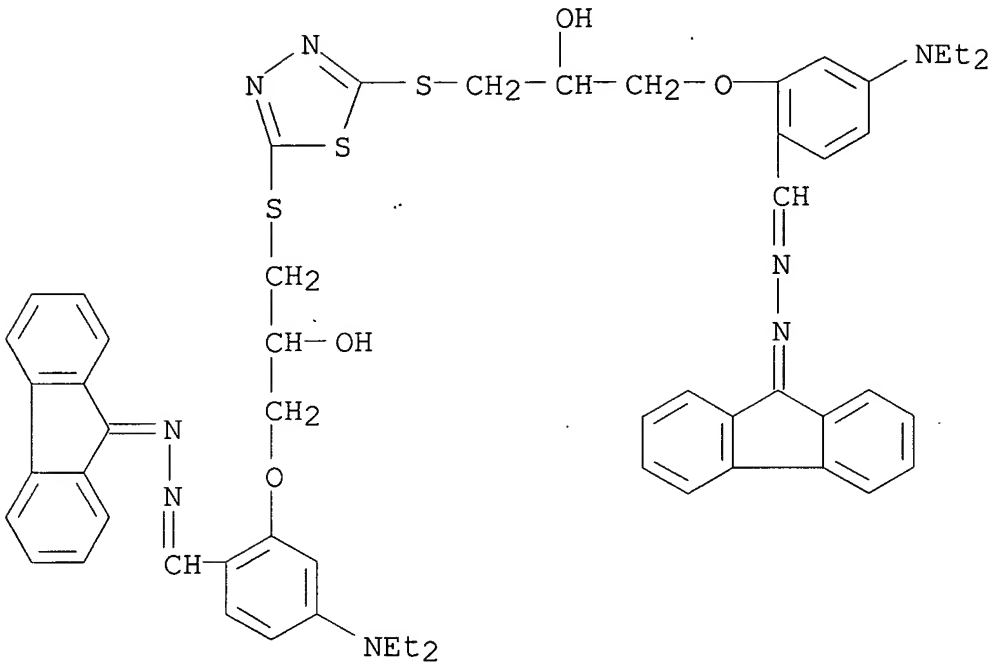

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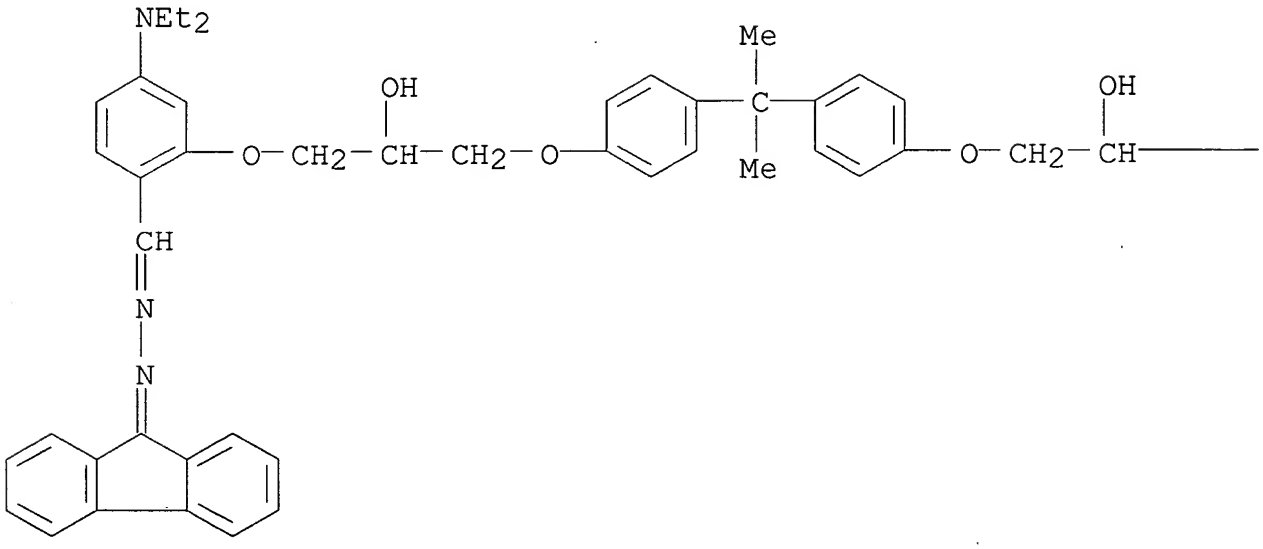

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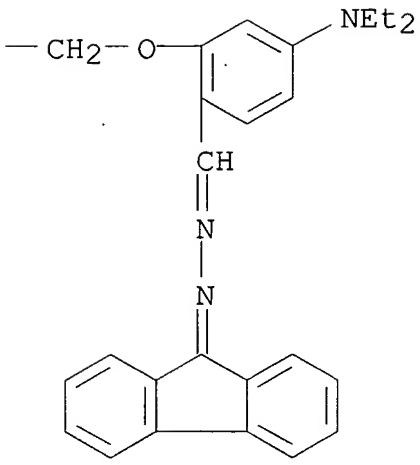

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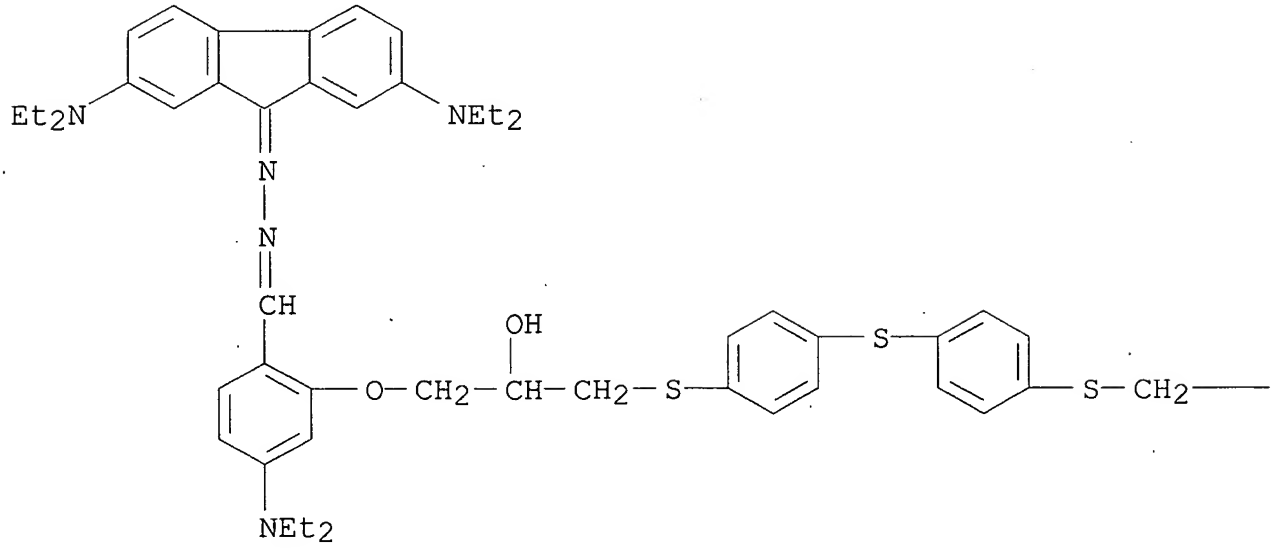

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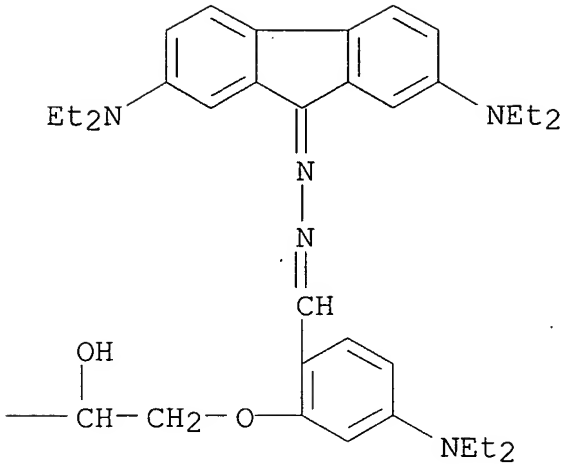

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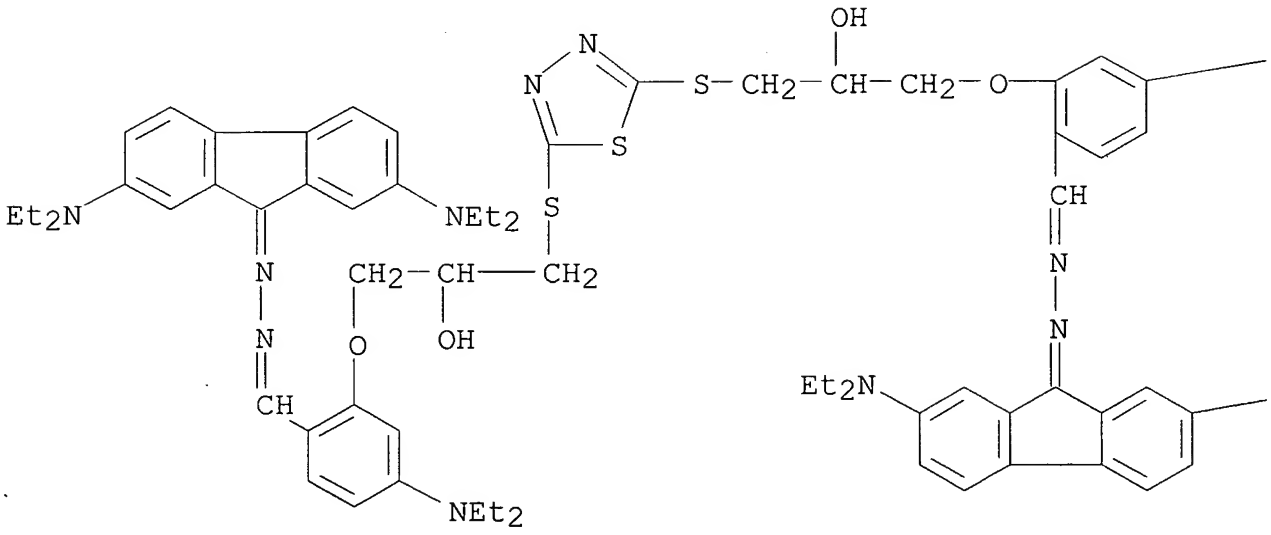

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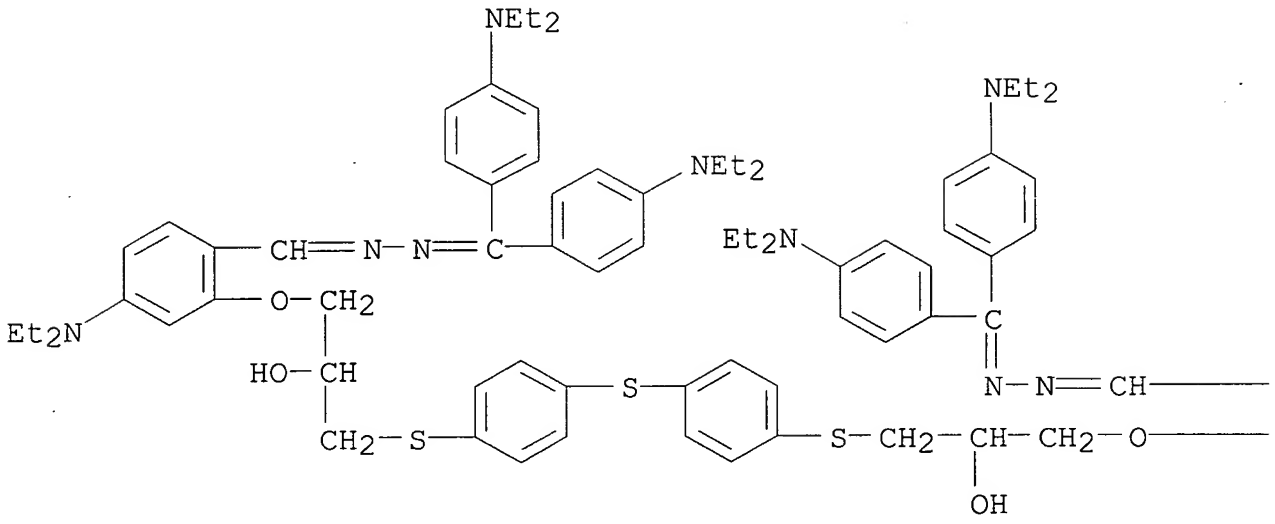

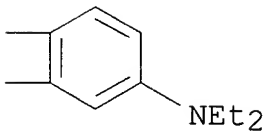


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DN 141:63806
ED Entered STN: 22 Mar 2004
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AU Garnovskii, Dmitrii A.; Pombeiro, Armando J. L.; Haukka, Matti; Sobota, Piotr; Kukushkin, Vadim Yu.
CS Centro de Quimica Estrutural, Complexo I, Instituto Superior Tecnico, Lisbon, 1049-001, Port.
SO Dalton Transactions (2004), (7), 1097-1103
CODEN: DTARAF; ISSN: 1477-9226
PB Royal Society of Chemistry
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
OS CASREACT 141:63806
AB Treatment of trans-[PtCl4(RCN)2] (R = Me, Et) with the hydrazone oximes MeC(:NOH)C(R'):NNH2 (R' = Me, Ph) at 45.degree. in CH2Cl2 gave trans-[PtCl4{NH:C(R)ON:C(Me)C(R'):NNH2}2] (R/R' = Me/Ph 1, Et/Me 2, Et/Ph 3) due to the regioselective OH-addn. of the bifunctional MeC(:NOH)C(R'):NNH2 to the nitrile group. The reaction of 3 and Ph3P:CHCO2Me gave the Pt(II) complex trans-[PtCl2{NH:C(Et)ON:C(Me)C(Ph):NNH2}2] (4). In 4, the imine ligand was liberated by substitution with 2 equiv of dppe (bis(1,2-diphenylphosphino)ethane) in CDCl3 to give, along with the free ligand, [Pt(dppe)2]Cl2. The free iminoacyl hydrazone, having a

restricted life-time, decomps. at 20-25.degree. in .apprx.20 h to the parent organonitrile and the hydrazone oxime. The Schiff condensation of the free NH2 groups of 4 with arom. aldehydes, i.e. 2-OH-5-NO2-benzaldehyde and 4-NO2-benzaldehyde, brings about the formation of the Pt(II) complexes trans-[PtCl2{NH:C(Et)ON:C(Me)C(Ph):NN:CH(C6H3-2-OH-5-NO2)}2] (5) and trans-[PtCl2{NH:C(Et)ON:C(Me)C(Ph):NN:CH(C6H4-4-NO2)}2] (6), resp., contg. functionalized remote peripheral groups. Metalization of 5, which can be considered as a novel type of metallo-ligand, was achieved by its reaction with M(OAc)2.cntdot.nH2O (M = Cu, n = 2; M = Co, n = 4) in a 1 : 1 molar ratio furnishing solid heteronuclear compds. [Pt]:[M] = 1 : 1. The complexes were characterized by C, H, N elemental analyses, FAB+ mass-spectrometry, IR, 1H, 13C{1H} and 195Pt NMR spectroscopies; x-ray structures were detd. for 3, 4 and 5.

ST platinum hydrazoneoxime nitrile prepn; crystal structure platinum hydrazoneoxime nitrile

IT Crystal structure
Molecular structure
(of platinum complexes with bifunctional ligands derived from hydrazone oximes and nitriles)

IT 107-12-0, Propanenitrile
(formation from decomp. of iminoacyl hydrazone)

IT 17116-21-1, Bis[1,2-bis(diphenylphosphino)ethane]platinum(2+) dichloride
(formation from reaction of dppe with platinum complexes contg. bifunctional ligands derived from hydrazone oximes and nitriles)

IT 709046-49-1
(formation from reaction of dppe with platinum complexes contg. bifunctional ligands derived from hydrazone oximes and nitriles and decomp.)

IT 709046-40-2P 709046-41-3P 709046-45-7P
(prepn. of)

IT 709046-46-8P 709046-48-0P
(prepn. of polymeric)

IT 709046-43-5P
(prepn., crystal structure and reaction with arom. aldehydes)

IT 709046-42-4P
(prepn., crystal structure and reaction with phosphorus ylide)

IT **709046-44-6P**
(prepn., crystal structure and reaction with transition metal acetates)

IT 143729-50-4, trans-Bis(acetonitrile)tetrachloroplatinum
342028-87-9, trans-Tetrachlorobis(propanenitrile)platinum
(reaction with hydrazone oximes)

IT 97-51-8, 5-Nitrosalicylaldehyde 555-16-8, 4-Nitrobenzaldehyde, reactions 1663-45-2, 1,2-Bis(diphenylphosphino)ethane
(reaction with platinum complex contg. bifunctional ligands

derived from hydrazone oximes and nitriles)
IT 6874-04-0
(reaction with platinum nitrile complexes)
IT 41939-99-5
(reaction with platinum nitrile complexes and formation from decomp. of iminoacyl hydrazone)
IT 2605-67-6, Methyl (triphenylphosphoranylidene)acetate
(reducing agent; reaction with platinum complex contg. bifunctional ligands derived from hydrazone oximes and nitriles)
RE.CNT 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD
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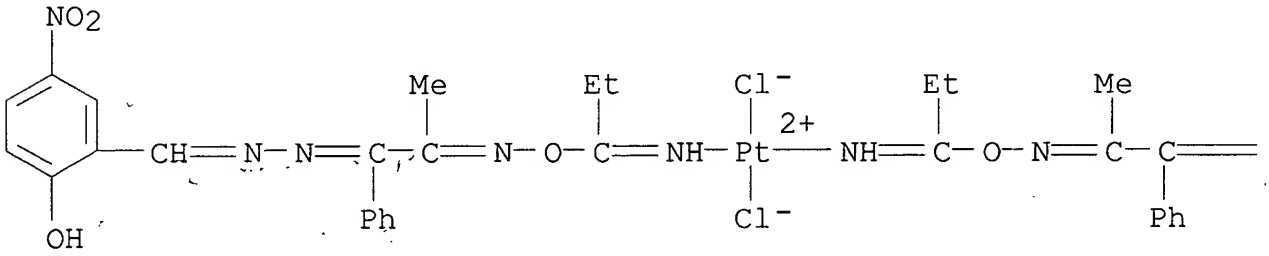
IT **709046-44-6P**
(prepn., crystal structure and reaction with transition metal acetates)

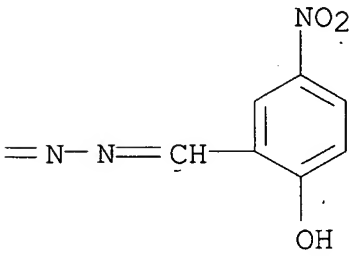
RN 709046-44-6 ZCAPLUS

CN Platinum, dichlorobis[[C(E)]-2-hydroxy-5-nitrobenzaldehyde (2E)-[(2E)-2-[[(1Z)-1-(imino-.kappa.N)propoxy]imino]-1-phenylpropylidene]hydrazone]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L9 ANSWER 3 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:45614 ZCAPLUS

DN 112:45614
ED Entered STN: 04 Feb 1990
TI Electrophotographic photoreceptor using azo dye
IN Shiino, Yasuko; Umehara, Masashige
PA Canon K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 01021458 | A2 | 19890124 | JP 1987-177029 | 198707 17 |

PRAI JP 1987-177029 19870717
CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| JP 01021458 | ICM | G03G005-06 |

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

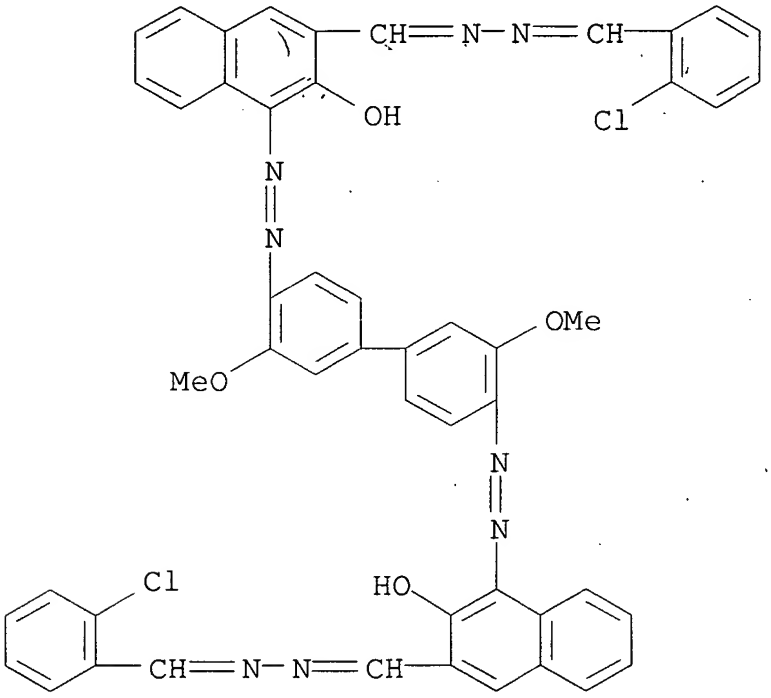
AB In the title photoreceptor, a photoconductive layer contains an azo dye I [R1, R2 = H, alkyl, aralkyl, aryl; Ar1 = aryl, arom. heterocyclic group; R2 and Ar1 may form a ring; X may condense with the benzone ring to form a polyarom. or heterocyclic ring; Ar2 = arom. hydrocarbon ring, arom. heterocyclic ring; n = 1-4]. Efficiency of carrier generation and/or transportation can be improved with the above photoreceptor. A photoreceptor with II showed Vo -700 V and E1/2 lx-s.
ST azo dye electrophotog photoreceptor
IT Dyes, azo
(electrophotog. photoconductive layer contg.)
IT Electrophotographic photoconductors
(photoconductive layer contg. azo dye for)
IT 123576-96-5 **123576-97-6** 123576-98-7 123576-99-8
123577-00-4 123577-01-5 123577-02-6 **123577-03-7**
**123577-04-8** 123577-05-9 123577-06-0 123577-07-1
123577-08-2 123577-09-3 **123598-86-7** 123598-87-8

124633-35-8
(photoconductive layer contg., for electrophotog. photoreceptor)

IT **123576-97-6 123577-03-7 123577-04-8**
**123598-86-7**
(photoconductive layer contg., for electrophotog. photoreceptor)

RN 123576-97-6 ZCAPLUS

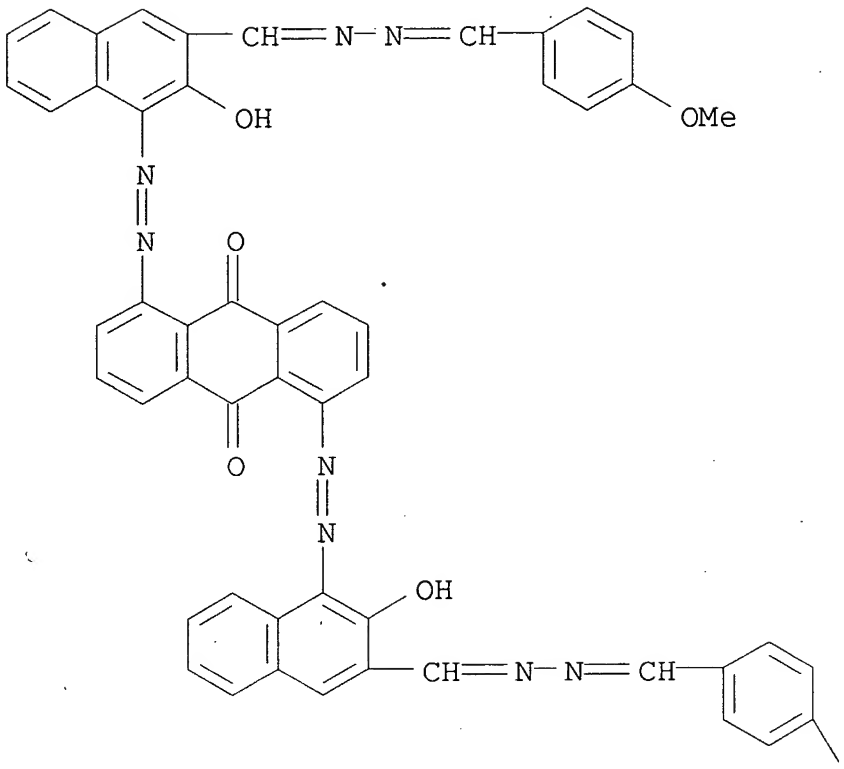
CN 2-Naphthalenecarboxaldehyde, 4,4'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis[[(2-chlorophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)




RN 123577-03-7 ZCAPLUS

CN 2-Naphthalenecarboxaldehyde, 4,4'-[(9,10-dihydro-9,10-dioxo-1,5-anthracenediyl)bis(azo)]bis[3-hydroxy-, 2,2'-bis[[(4-methoxyphenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)

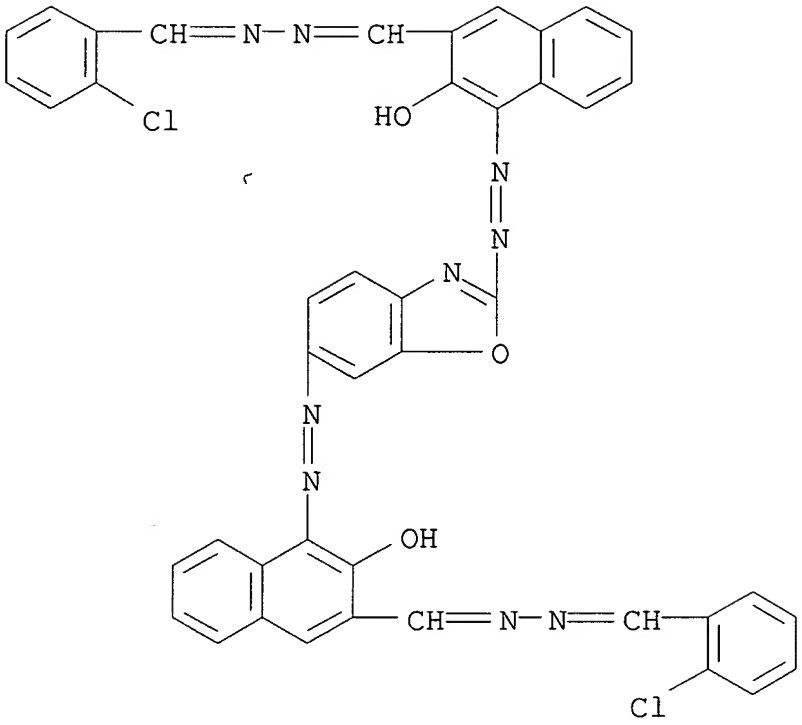
PAGE 1-A



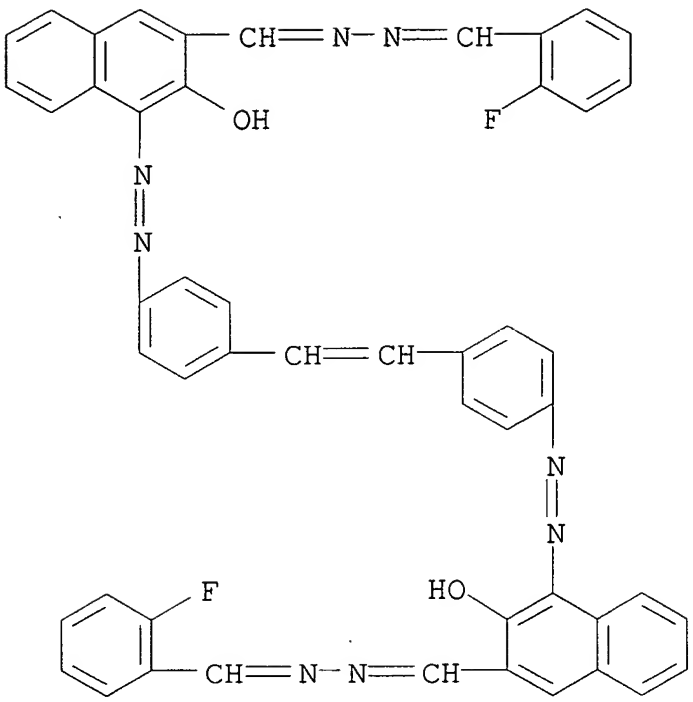
PAGE 2-A

RN 123577-04-8 ZCAPLUS

CN 2-Naphthalenecarboxaldehyde, 4,4'-[2,6-benzoxazolediylbis(azo)]bis[3-hydroxy-, bis[[(2-chlorophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



RN 123598-86-7 ZCAPLUS
CN 2-Naphthalenecarboxaldehyde, 4,4'-[1,2-ethenediylbis(4,1-phenyleneazo)]bis[3-hydroxy-, bis[[(2-fluorophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



L9 ANSWER 4 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 1988:560521 ZCAPLUS
DN 109:160521
ED Entered STN: 28 Oct 1988
TI Electrophotographic photoreceptor using phthalocyanine dye and bishydrazone compound in the photoconductor layer
IN Horie, Seiji; Makino, Naonori; Sato, Hideo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G005-04
ICA G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 63048552 | A2 | 19880301 | JP 1986-191774 | 198608 18 |

US 4814245 A 19890321 US 1987-86449
198708
18

PRAI JP 1986-191774 A 19860818

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| JP 63048552 | ICM | G03G005-04 |
| | ICA | G03G005-06 |

GI For diagram(s), see printed CA Issue.

AB The charge-generating layer contains a phthalocyanine dye (e.g., .epsilon.-type Cu phthalocyanaine or AlCl3-phthalocyanine complex), and the charge-transporting layer contains .gtoreq.1 bis-hydrazone compds. (I) and (II) (R1, R2 = C1-12 alkyl, C7-20 aralkyl, monovalent single or .gtoreq. 2-4-ring condensed arom.. hydrocarbon residue; R1 and R2 may form heterocycle; R3 = H, C1-12 alkyl, C7-20 aralkyl, aryl; R4, R7 = C1-12 alkyl, C7-20 aralkyl, aryl, halo, alkoxy, aryloxy; R5, R6, R8 = C1-12 alkyl, C7-20 aralkyl, aryl; R5 and R6 may bond together to form an N-heterocycle; X = (III); l, n = 0, 1-6; m = 0, 1; Y = O, S, Se, imino, CH2; and Z = moiety necessary to form benzene and naphthalene ring). This electrophotog. photoreceptor provides high sensitivity and stability.

ST electrophotog photoreceptor phthalocyanine dye bishydrazone

IT Electrophotographic photoconductors
(composite, contg. bishydrazone compds. and phthalocyanine dyes)

IT 147-14-8 14154-42-8
(charge-generating layer contg., for electrophotog. photoreceptor)

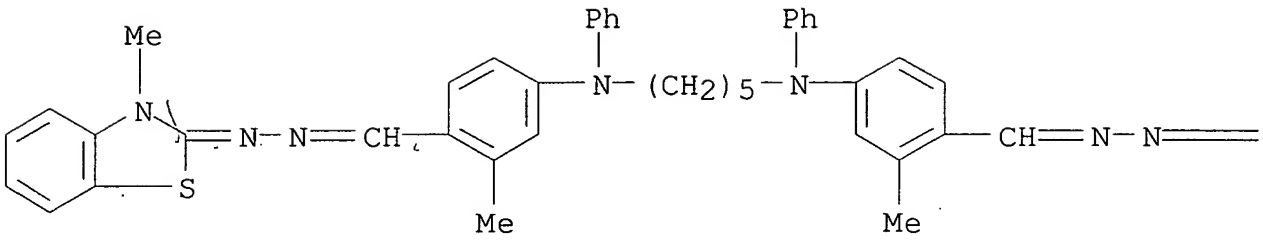
IT 101158-34-3 101158-35-4 101158-37-6 101158-38-7 101158-40-1
101158-41-2 101158-43-4 101158-47-8 116826-20-1 116826-21-2
**116826-22-3** 116826-23-4
(charge-transporting layer contg., for electrophotog. photoreceptor)

IT **116826-22-3**
(charge-transporting layer contg., for electrophotog. photoreceptor)

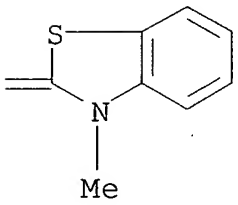
RN 116826-22-3 ZCAPLUS

CN Benzaldehyde, 4,4'-[1,5-pentanediylbis(phenylimino)]bis[2-methyl-, bis[(3-methyl-2(3H)-benzothiazolylidene)hydrazone] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L9 ANSWER 5 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 1986:139257 ZCAPLUS
DN 104:139257
ED Entered STN: 19 Apr 1986
TI Electrophotographic photoreceptors
IN Watarai, Osamu; Horie, Seiji
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G005-06
ICA C09B026-02; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 60186847 | A2 | 19850924 | JP 1984-42370 | 19840306 |
| | JP 04005382 | B4 | 19920131 | | |

US 4594304 A 19860610 US 1985-708461 198503 05

PRAI JP 1984-42370 A 19840306

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| JP 60186847 | ICM | G03G005-06 |
| | ICA | C09B026-02; H01L031-08 |

GI For diagram(s), see printed CA Issue.

AB Electrophotog. photoreceptors contain .gtoreq.1 hydrazone compd. selected from I, II, and III [R, R1 = C1-12 alkyl, C7-20 aralkyl, condensed aryl (2-4 rings); RR1 in combination may complete a heterocycle; R2 = H, C1-12 alkyl, C7-20 aralkyl, aryl; R3, R4, R7, R8, R9 = C1-12 alkyl, C7-20 aralkyl, aryl; R3R4 in combination may complete a heterocycle; R5, R6 = H, C1-12 alkyl, C7-20 aralkyl, aryl, halo, alkoxy, aryloxy; A = benzene on naphthalene ring; Z = IV; m = 0, 1; n, p = 0-6; R10, R11 = same as R5 and R6; R10R11 may combine to form condensed ring; Z1 = O, S, Se, imino, methylene]. The hydrazone compds. are esp. useful as electrophotog. charge carrier-transporting agents.

ST electrophotog charge carrier transporting agent; hydrazone charge carrier transporting agent

IT Photography, electro-, developers
(composite, charge carrier-transporting hydrazone compds. for)

IT 101158-49-0 101158-50-3 **101158-51-4** 101158-52-5 101183-43-1
(electrophotog. charge carrier-transporting agent)

IT 101158-34-3P 101158-35-4P 101158-36-5P 101158-37-6P 101158-38-7P 101158-39-8P 101158-40-1P 101158-41-2P 101158-42-3P 101158-43-4P 101158-44-5P 101158-45-6P 101158-46-7P 101158-47-8P 101158-48-9P
(prepn. of, as electrophotog. charge carrier-transporting agent)

IT 29666-92-0
(reaction of, with bis(methylformylanilino)hexane)

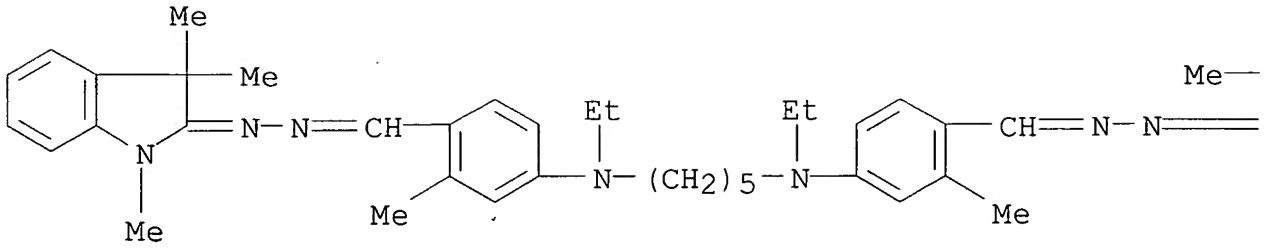
IT 101158-53-6
(reaction of, with diphenylhydrazine hydrochloride)

IT **101158-51-4**
(electrophotog. charge carrier-transporting agent)

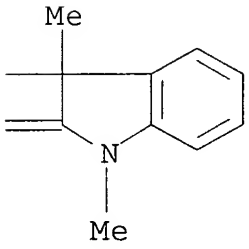
RN 101158-51-4 ZCAPLUS

CN Benzaldehyde, 4,4'-[1,5-pentanediylbis(ethylimino)]bis[2-methyl-, bis[(1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)hydrazone] (9CI) (CA INDEX NAME)

PAGE 1-A

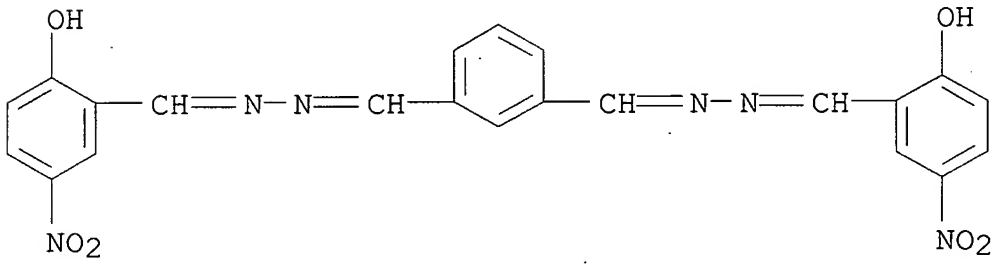


PAGE 1-B



L9 ANSWER 6 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:491705 ZCAPLUS
DN 79:91705
ED Entered STN: 12 May 1984
TI Nonconjugated bis(arylidene)isophthalazines
AU Shubina, L. V.; Gotsko, N. V.
CS USSR
SO Vestn. Beloruss. Univ. (1972), 2(3), 40-3
From: Ref. Zh., Khim. 1973, Abstr. No. 5Zh211
DT Journal
LA Russian
CC 25-5 (Noncondensed Aromatic Compounds)
GI For diagram(s), see printed CA Issue.
AB Reaction of 1,3-C6H4(CHO)2 with N2H4.H2O in alc. 2 hr at .apprx.20.degree. gave 70% 1,3-C6H4(CH:NNH2)2, which with the appropriate aldehyde gave the title azines (I). Among the I prepd. were the following (Ar, % yield given): Ph, 60; 2-HOC6H4, 83; 2-MeOC6H4, 85; 2,5-HO(O2N)C6H3, 77; 2-naphthyl, 69. HCl salts were prepd. and characterized.
ST isophthalazine bisarylidene; arylideneisophthalazine; azine isophthalaldehyde arom aldehyde
IT Azines
(of arom. aldehydes and isophthalaldehyde)

IT 36604-00-9P 42546-09-8P 42546-10-1P **42546-11-2P**
42546-12-3P 42546-13-4P 42546-14-5P 42546-15-6P 42546-16-7P
(prepn. of)
IT 42546-17-8
(reaction of, with arom. aldehydes)
IT 66-99-9 97-51-8 100-10-7 104-88-1 123-11-5 135-02-4
574-96-9
(reaction of, with isophthalaldehyde dihydrazone)
IT 90-02-8, reactions 100-52-7, reactions
(with isophthalaldehyde dihydrazone)
IT **42546-11-2P**
(prepn. of)
RN 42546-11-2 ZCAPLUS
CN 1,3-Benzenedicarboxaldehyde, bis[[(2-hydroxy-5-nitrophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
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| L2 | 1669 | azine or ketazine | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:47 |
| L3 | 1495 | azine or ketazine and amine | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:47 |
| L4 | 1492 | azine or ketazine and amine and charge | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:47 |
| L5 | 1492 | azine or ketazine and amine and charge adj transport | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:47 |
| L6 | 1669 | azine or ketazine | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 17:05 |
| L7 | 47 | l6 and charge adj transport | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:56 |
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| L9 | 0 | l8 not l6 | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:57 |
| L10 | 67 | l8 not l7 | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 16:57 |
| L11 | 1567 | l6 not l8 | EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/03/04 17:06 |